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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,854	07/20/2006	Norio Tanaka	128794	7830

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EXAMINER	
CONNELLY CUSHWA, MICHELLE R	
ART UNIT	PAPER NUMBER
2874	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,854	TANAKA ET AL.	
	Examiner	Art Unit	
	MICHELLE R. CONNELLY CUSHWA	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/30/07, 11/1/06, 7/20/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on March 16, 2004. It is noted, however, that applicant has not filed a certified copy of the Japanese 2004-074874 application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

The prior art documents submitted by applicant in the Information Disclosure Statements filed on July 20, 2006; November 1, 2006; and January 30, 2007 have all been considered and made of record (note the attached copies of form PTO-1449).

Drawings

Twenty-six sheets of drawings were filed on July 20, 2006 and have been accepted by the Examiner.

Specification

The abstract of the disclosure is objected to because it exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno et al. ("Development of Optically Controlled Optical Switch", Light Alliance, November 1, 2003, Vol. 14, No. 11, pp. 26-29; cited by Applicant) in view of Barga et al. (US 7,461,292 B2), Kaneko (JP 05-219540 A), and/or Huber (US 5,659,351).

Regarding claim 1; Ueno et al. discloses an optically controlled optical path switching type apparatus comprising (see translated pages 1-4 provided by Applicant and Figures 3a, 3b and 5): an optical signal transmitting unit includes a signal light beam source for irradiation a signal light beam having one or more wavelengths, and a control light beam light source for irradiation a control light beam having one or more wavelengths that are different from those of the signal light beam; an optical switch comprising one or more light absorbing layer films for transmitting the signal light beam and selectively absorbing respectively only one specific wavelength of the control light beams; means for respectively converging and irradiating light beam and the signal light beam to each of the light absorbing layer films; one or more thermal lens forming devices for causing the converged signal light beam to exit while maintaining beam convergence or for varying the angle of divergence of the signal light beam and for causing the signal beam to exit, in response to the presence of absence of irradiation of the one specific wavelength of the control light beam, but using a thermal lens wavelength the light absorbing layer films and based on a distribution of refractive index produced reversibly caused by temperature increase generated in an area of the light absorbing layer film that has absorbed the one specific wavelength of the control light

beam and in the periphery thereof; and one or more mirrors, each provided after one of the thermal lens forming devices and having a hole and reflecting means, for passing the signal light beam exiting the thermal lens forming devices through the holes or deflecting the optical path of the signal light beam by reflecting the signal light beam by the reflecting means in response to the presence or absence of irradiation of the one specific wavelength of the control light beam.

Ueno et al. teaches that the thermal lens allows a high switching speed to be obtained (see the bottom of page 3 to the top of page 4 of the translation provided by Applicant) and suggests that the disclosed optical switching device be employed with fiber related optical components (see page 4 of the translation provided by Applicant). Fiber related optical components are used to form optical communication networks, as is known in the art, thus the teachings of Ueno et al. suggest that the disclosed optical switch may be employed in known optical communication networks requiring optical switches in order to provide a high switching speed.

Optical networks including a data server device, a data communication unit and a client device, wherein the data communication unit comprises an optical switch, an optical signal path, an optical transmitting unit, an optical receiving transmission/reception control unit are well known in the art. For example: see Figure 1 and column 3, lines 15-23 of Barga et al. (US 7,461,292 B2), which discloses a data server device (20, 22), a data communication unit (switching network, 30), and a client device (40); see Figure 1 and the abstract of Kaneko (JP 05-219540 A), which discloses a data server device (central station, 1), a data communication unit including an optical

switch device (6) and client devices (terminal station, 3); and/or see Figure 1 of Huber (US 5,659,351), which discloses a data server device (34), a data communication unit (46), and a client device (32, 50).

Therefore, one of ordinary skill in the art would have found it obvious to employ the optical switch disclosed by Ueno et al. in an optical network including a data server device, a data communication device and a client device as an alternative to other known optical switches to provide a high switching speed in the manner taught by Ueno et al.

Regarding claims 2, 4 and 5; one of ordinary skill in the art would have found it obvious to use the switches disclosed by Ueno et al. with a signal light beam that transports and data communication units that irradiate and transmit an arbitrary size of digital information that has been split into optical packets, each containing a fixed length or variable length optical digital signals as the signal light beams, and actuate the optical switch by irradiating an optical tag representing the identification information of a destination client device to each of the optical packets as the control light beam in synchronization with the irradiation of optical packets. Huber, for example, teaches an optical communication network that operates with digital signals.

Regarding claim 3; the optical communication networks of Barga et al., Kaneko and Huber each cause signal light of one or more wavelengths carrying data converted to an optical signal and having one or more wavelength to travel coaxially over optical fibers within the networks, include optical switches that control the signal light beam direction in response to a data transporting destination, and distribute data from a data

server device to one or more specific client devices selected among a plurality of client devices.

The switch disclosed by Ueno et al. requires a control light beam that is irradiated from a control light beam light source that has one or more wavelengths different for a signal light beam to travel substantially coaxial and in the same direction as the signal light beam for proper operation, as described by Ueno et al, wherein the switch requires converging and irradiating respectively the control light beam and the signal light beam to each of one or more light absorbing layers films that transmit the signal light bean and that absorb selectively only one specific wavelength of the control light beam (see the disclosure of Ueno et al.), such that at each of one or more thermal lens forming devices each containing one or more of the light absorbing layer films, by using a thermal lens based on a distribution of refractive index produced reversibly caused by temperature increase generated in an area of the light absorbing layer film that has absorbed the one specific wavelength of the control light beam and in the periphery thereof and in response to the presence or absence of irradiation of the control light beam having the one specific wavelength, causing the converged signal light beam to exit maintaining the beam converged or to exit with the angle larger than the normal divergence angle or the normal divergence angle thereof (see Figure 3), using a hole-provided mirror having a reflecting surface, in response to the presence or absence of irradiation of the control light beam of the one specific wavelength, causing the signal light beam exited from the thermal lens forming device to travel straight through the hole

(see Figure 3(a)) or changing the optical paths thereof by reflecting the signal light beam at the reflecting surface (see Figure 3(b)).

Regarding claims 6 and 7; it would have been obvious to one having ordinary skill in the art at the time the invention was made to use any desired material to form the light absorbing layer film, including the known materials listed in claims 6 and 7 of the present application, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 8 and 9; the data server device (34) disclosed by Huber distributes digital static image data or moving image data to one or more specific client devices selected among a plurality of client devices.

Conclusion

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571) 272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

/Michelle R. Connelly-Cushwa/
Primary Patent Examiner
Art Unit 2874